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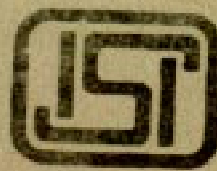
IS : 9813 • 1981

"पुनर्विधि १९८८"

"RE-AFFIRMED 1990"

Indian Standard
SPECIFICATION FOR
TRACTOR-MOUNTED BLADE TERRACERS

UDC 631.311.82.072.3 : 631.613.1



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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Price Rs 5⁰⁰

August 1981

Indian Standard

SPECIFICATION FOR TRACTOR-MOUNTED BLADE TERRACERS

Soil Working Equipment Sectional Committee, AFDC 50

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SPECIFICATION FOR TRACTOR-MOUNTED BLADE TERRACERS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 27 April 1981, after the draft finalized by the Soil Working Equipment Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 For application of scientific water management techniques, land levelling is being increasingly adopted along with the accelerated growth of farm mechanization. Blade terracers are commonly used for this purpose. A need has, therefore, been felt to bring out an Indian Standard to help the manufacturers to produce quality blade terracers.

0.2.1 IS : 7353-1974* is complementary to this standard.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the materials, dimensions and other requirements for tractor-mounted blade terracers.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply (*see also* Fig. 1).

2.1 Blade — Single or double edge cutting bit fitted on the front of the mouldboard.

*Specification for blade for tractor-operated terracer.

†Rules for rounding off numerical values (*revised*).

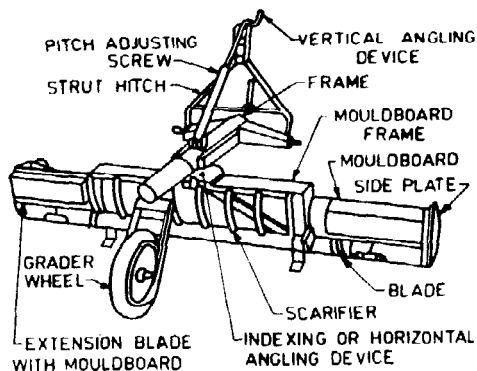


FIG. 1 ASSEMBLY OF BLADE TERRACER

2.2 Blade Terracer — An implement used for operations like earth moving, levelling, bunding, filling pits, making wide drain and roads, back filling, etc.

2.3 Blade Tilt or Vertical Angling Device — A device in the form of adjusting screw, for setting cutting blade angle in vertical plane up to 35° .

2.4 Extension Blade — A component which can be fitted on both sides of the mouldboard for extending cutting width, when required.

2.5 Frame — A rigid structure on which mouldboard and linkage mast are fitted.

2.6 Indexing or Horizontal Angling Device — A device used for setting the cutting blade angle in horizontal plane up to 60° either side with respect to direction of travel.

2.7 Mouldboard — Concave-shape plate on which main cutting blade is fitted and which allows the earth to roll freely.

2.8 Mouldboard Frame — A rigid structure on which mouldboard and blade are fitted. Provision is also made to fit extension blade or side plates on it.

2.9 Pitch Adjusting Screw — A screw with handle fitted on the linkage mast and main frame, for precise adjustment of blade tilt.

2.10 Scarifier — Tooth shaped rods for breaking hard ground for easier penetration. It can be used with reversed blade assembly.

2.11 Side Plates — A component fitted on terracer for preventing the material from spilling around the blade.

2.12 Stabilizer Kit — Additional links for avoiding side swing on the tractors, where internal check chains on lower links are used.

3. MATERIALS

3.1 The material for manufacture of various components of terracer excepting blade, shall be as given in col 3 of Table 1. The material should conform to the standard and grade given in col 4 and 5 of Table 1.

TABLE 1 MATERIAL FOR DIFFERENT COMPONENTS OF TERRACER

SL No.	COMPONENT	MATERIAL	REFER TO	GRADE
(1)	(2)	(3)	(4)	(5)
i)	Frame	Mild steel	IS : 226-1975*	Fe 410-S
ii)	Strut hitch	Mild steel	IS : 226-1975*	Fe 410-S
iii)	Hitch pin	Carbon steel	IS : 1570-1961†	C-40
iv)	Pitch adjusting screw	Carbon steel	IS : 1570-1961†	C-40
v)	Mouldboard frame	Mild steel	IS : 226-1975*	Fe 410-S
vi)	Side plate	Mild steel	IS : 226-1975*	Fe 410-S
vii)	Mouldboard	Mild steel	IS : 226-1975*	Fe 410-S
viii)	Scarifier	Carbon steel	IS : 1570-1961†	C-45

*Specification for structural steel (standard quality) (*fifth revision*).

†Schedules for wrought steels for general engineering purposes.

3.2 The material for blade shall be as given in IS : 7353-1974*. The material for extension blade shall be the same as that of the blade.

4. SIZE

4.1 The size of the terracer shall be determined by the length of blade, plus the length of extension blade, if any, in metres. The nominal size of the terracer may be between 1.5 and 3.5 m.

5. OTHER REQUIREMENTS

5.1 Frame — The frame shall be capable of sustaining a pull of 9.8 N per mm of blade width without permanent deflection or change in shape. The point of application of pull shall be at mid point of cutting blade.

*Specification for blade for tractor-operated terracer.

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5.2 Blade — The blade of terracer shall conform to IS : 7353-1974*.

5.3 The hitch dimensions shall conform to the requirements given in IS : 4468-1977†.

5.4 The hardware fitted on the blade and on the face of the mouldboard (portion coming in direct contact with soil) should not protrude above the surface, and should be of 8·8 grade quality.

5.5 For extra fine levelling, provision may be made for grader wheel. The wheel may be of size 300 × 90 mm, category A of IS : 7369-1974‡.

5.6 The blade and mouldboard should have a contour such that it allows the free rolling of earth (*see* Fig. 2). The curvature of mouldboard with blade (*see* R in Fig. 2) shall be 300 or 375 mm with a tolerance of ± 20 mm.

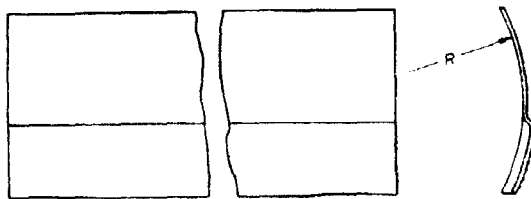


FIG. 2 MOULDBOARD AND BLADE

6. WORKMANSHIP AND FINISH

6.1 All components of the terracer shall be free from pits, burrs and other visual defects.

6.2 The welding of various parts shall be free from blow holes, exposed porosity, exposed inclusions, unfilled craters and unfused welds (*see also* 7.1 of IS : 822-1970§).

6.3 The exposed metallic parts shall be free from rust and shall have a protective coating which will prevent surface deterioration in transit and storage.

*Specification for blade for tractor-operated terracer.

†Dimensions for three-point linkage of agricultural wheeled tractors (*first revision*).

‡Specification for wheels and castors.

§Code of procedure for inspection of welds.

7. MARKING AND PACKING

7.1 Marking — Each terracer shall be marked with the following particulars:

- a) Manufacturer's name and trade-mark, if any;
- b) Size; and
- c) Batch or code number.

7.1.1 These particulars shall be stamped, embossed or engraved on metallic plate and rigidly fitted on a non-wearing part of terracer.

7.1.2 The terracer may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

7.2 Packing — The terracer should be packed to ensure safety of the parts in transportation as agreed to between the manufacturer and the purchaser.

8. SAMPLING AND CRITERIA FOR CONFORMITY

8.1 Unless otherwise agreed to between the purchaser and the supplier, the method of sampling scheme and criteria for conformity shall be as given in IS : 7201-1974*.

*Method of sampling of agricultural machinery and tractors.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²